



DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2021-0951; Project Identifier AD-2021-01047-R; Amendment 39-21804; AD 2021-23-06]

RIN 2120-AA64

Airworthiness Directives; Various Model 234 and Model CH-47D Helicopters

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Final rule; request for comments.

SUMMARY: The FAA is adopting a new airworthiness directive (AD) for various Model 234 and Model CH-47D helicopters. This AD was prompted by two reports of mechanical failures of the longitudinal cyclic trim actuator (LCTA). This AD requires determining the maintenance history, and hours time-in-service (TIS) and number of lift cycles for each LCTA since last overhaul, and then requires initial and repetitive overhauls of each LCTA based on that maintenance and service history. This AD also prohibits installing an LCTA unless it meets certain requirements. Finally, this AD requires reporting certain information to the FAA. The FAA is issuing this AD to address the unsafe condition on these products.

DATES: This AD is effective [INSERT DATE 15 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

The FAA must receive comments on this AD by [INSERT DATE 45 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

ADDRESSES: You may send comments, using the procedures found in 14 CFR 11.43 and 11.45, by any of the following methods:

- Federal eRulemaking Portal: Go to <https://www.regulations.gov>. Follow the instructions for submitting comments.

- Fax: (202) 493-2251.

- Mail: U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue SE, Washington, DC 20590.

- Hand Delivery: Deliver to Mail address above between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.

Examining the AD Docket

You may examine the AD docket at <https://www.regulations.gov> by searching for and locating Docket No. FAA-2021-0951; or in person at Docket Operations between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The AD docket contains this final rule, any comments received, and other information. The street address for the Docket Operations is listed above.

FOR FURTHER INFORMATION CONTACT: David Herron, Aerospace Engineer, Systems & Equipment Section, Seattle ACO Branch, FAA, 2200 South 216th St., Des Moines, WA 98198; phone and fax: (206) 231-3554; email david.herron@faa.gov.

SUPPLEMENTARY INFORMATION:

Background

The FAA received two reports of mechanical failure of an LCTA, the function of which is to constrain and control the non-rotating swashplate. In both failures, which occurred on Model CH-47D helicopters, the flight crew was forced to make an emergency landing as they had difficulty controlling the helicopter. Model 234 and Model CH-47D helicopters both have the same LCTA installed, with two installed on each rotorcraft. Investigation as to the root cause of these failures has determined that inadequate maintenance overhaul procedures and scheduled overhaul intervals for this

critical flight component with a single structural load path likely contributed to this unsafe condition. One event occurred due to excessive wear of the acme screw threads from degradation or lack of lubrication. The other event was due to metal fatigue leading to the fracture of the fourth stage spur gear shaft (part of the acme screw) caused by repetitive abnormal loading. The repetitive abnormal loading occurred because of the incorrect installation of a travel limit switch, which rendered the switch ineffective in removing power from the electric motor at the designed travel limit, thus allowing the electric motor to repetitively overstroke the actuator into a mechanical stop. While the failure modes were different, the failure effects were the same: loss of the constraint and control normally provided by the LCTA. Failure of the LCTA, if not prevented, could result in loss of control of the rotor blades and subsequent loss of control of the helicopter or the rotor blades striking the fuselage. The FAA is issuing this AD to address the unsafe condition on these products.

The type certificate (TC) holder for Model 234 helicopters is Columbia Helicopters Inc. (TC previously held by Boeing Defense & Space Group), and the TC holders for Model CH-47D helicopters currently include Columbia Helicopters, Inc., Billings Flying Service, Inc., Tandem Rotor, LLC, and Unical Aviation, Inc. (originally manufactured for military use). The FAA did not limit this AD to these TC holders because the FAA expects that additional TC holders of helicopters are subject to this same unsafe condition.

FAA's Determination

The FAA is issuing this AD because the agency has determined the unsafe condition described previously is likely to exist or develop in other products of the same type design.

AD Requirements

This AD requires, within 3 calendar days after the effective date of the AD, determining the hours TIS and lift cycles since last overhaul for each LCTA. If LCTA lift cycles cannot be determined, counting 6 lift cycles for each hour TIS is required. For purposes of this AD, a lift cycle is defined as takeoff from ground for flight, a lift of a new external load while in flight, or a lift of a new internal load while in flight (e.g., fluid drawn into an internal tank).

If the last LCTA overhaul was not approved for return to service by a person that meets the requirements of 14 CFR part 43, or, if you are unable to establish hours TIS and lift cycles since last overhaul of an LCTA (e.g., hours TIS and lift cycles for each LCTA were not tracked), this AD requires, within 10 calendar days after the effective date of the AD, and thereafter at intervals not to exceed 3,000 hours TIS or 18,000 lift cycles, whichever occurs first, overhauling that LCTA. For purposes of any overhaul required by this AD, the overhaul must include an inspection of each acme screw for wear and cracking, lubricating all drive threads and gears, and a test to ensure proper operation of the extend and retract travel limit switches.

If the last LCTA overhaul was approved for return to service by a person that meets the requirements of 14 CFR part 43, overhauling the LCTA as described in this AD is required within 500 hours TIS or 3,000 lift cycles since last overhaul, whichever occurs first; or within 90 days after the effective date of the AD, whichever occurs later. Thereafter, overhauling each LCTA at intervals not to exceed 3,000 hours TIS or 18,000 lift cycles, whichever occurs first, is required.

This AD also prohibits, as of the AD's effective date, installing any LCTA on any helicopter unless it has been approved for return to service by a person that meets the requirements of 14 CFR part 43 after an overhaul as described in this AD, and that LCTA has not been in service for more than 3,000 hours TIS or 18,000 lift cycles since that

overhaul. Finally, this AD requires, within 10 calendar days after completing each LCTA overhaul required by this AD, reporting certain information to the FAA.

Interim Action

The FAA considers this AD to be an interim action. The FAA is currently considering requiring overhaul of the LCTA at different time intervals or takeoff and lift cycles. However, the planned compliance time for those actions would allow enough time to provide notice and opportunity for prior public comment on the merits of those actions. Additionally, the inspection reports that are required by this AD will enable the FAA to obtain better insight into the cause of the unsafe condition and to eventually develop final action to address the unsafe condition. Once final action has been identified, the FAA might consider further rulemaking.

Justification for Immediate Adoption and Determination of the Effective Date

Section 553(b)(3)(B) of the Administrative Procedure Act (APA) (5 U.S.C. 551 *et seq.*) authorizes agencies to dispense with notice and comment procedures for rules when the agency, for “good cause,” finds that those procedures are “impracticable, unnecessary, or contrary to the public interest.” Under this section, an agency, upon finding good cause, may issue a final rule without providing notice and seeking comment prior to issuance. Further, section 553(d) of the APA authorizes agencies to make rules effective in less than thirty days, upon a finding of good cause.

An unsafe condition exists that requires the immediate adoption of this AD without providing an opportunity for public comments prior to adoption. The FAA has found that the risk to the flying public justifies foregoing notice and comment prior to adoption of this rule because the LCTAs are critical flight control components with design elements that must be properly and regularly maintained to ensure continued safe flight of the identified rotorcraft. The two reported in-service events evidence a deficiency in the maintenance of the LCTAs that must be resolved. Additionally, the

compliance time for some of the required actions is within 3 calendar days after the effective date of this AD, which is shorter than the time necessary for the public to comment and for publication of the final rule. Accordingly, notice and opportunity for prior public comment are impracticable and contrary to the public interest pursuant to 5 U.S.C. 553(b)(3)(B).

In addition, the FAA finds that good cause exists pursuant to 5 U.S.C. 553(d) for making this amendment effective in less than 30 days, for the same reasons the FAA found good cause to forego notice and comment.

Comments Invited

The FAA invites you to send any written data, views, or arguments about this final rule. Send your comments to an address listed under ADDRESSES. Include “Docket No. FAA-2021-0951 and Project Identifier AD-2021-01047-R” at the beginning of your comments. The most helpful comments reference a specific portion of the final rule, explain the reason for any recommended change, and include supporting data. The FAA will consider all comments received by the closing date and may amend this final rule because of those comments.

Except for Confidential Business Information (CBI) as described in the following paragraph, and other information as described in 14 CFR 11.35, the FAA will post all comments received, without change, to <https://www.regulations.gov>, including any personal information you provide. The agency will also post a report summarizing each substantive verbal contact received about this final rule.

Confidential Business Information

CBI is commercial or financial information that is both customarily and actually treated as private by its owner. Under the Freedom of Information Act (FOIA) (5 U.S.C. 552), CBI is exempt from public disclosure. If your comments responsive to this AD contain commercial or financial information that is customarily treated as private, that

you actually treat as private, and that is relevant or responsive to this AD, it is important that you clearly designate the submitted comments as CBI. Please mark each page of your submission containing CBI as "PROPIN." The FAA will treat such marked submissions as confidential under the FOIA, and they will not be placed in the public docket of this AD. Submissions containing CBI should be sent to David Herron, Aerospace Engineer, Systems & Equipment Section, Seattle ACO Branch, FAA, 2200 South 216th St., Des Moines, WA 98198; phone and fax: (206) 231-3554; email david.herron@faa.gov. Any commentary that the FAA receives which is not specifically designated as CBI will be placed in the public docket for this rulemaking.

Regulatory Flexibility Act

The requirements of the Regulatory Flexibility Act (RFA) do not apply when an agency finds good cause pursuant to 5 U.S.C. 553 to adopt a rule without prior notice and comment. Because FAA has determined that it has good cause to adopt this rule without prior notice and comment, RFA analysis is not required.

Costs of Compliance

The FAA estimates that this AD affects 74 helicopters of U.S. Registry. Labor rates are estimated at \$85 per work-hour. Based on these numbers, the FAA estimates the following costs to comply with this AD.

Removing and reinstalling both LCTAs on each helicopter will take about 4 work-hours, with no parts costs, for an estimated cost of about \$340 per helicopter or \$25,160 for the U.S. fleet.

Overhauling both LCTAs on each helicopter will take about 56 work-hours, and parts costs will be about \$200, for an estimated cost of about \$4,960 per overhaul.

Reporting information to the FAA will take about 1 work hour per helicopter, for an estimated cost of about \$85 per report.

Paperwork Reduction Act

A federal agency may not conduct or sponsor, and a person is not required to respond to, nor shall a person be subject to a penalty for failure to comply with a collection of information subject to the requirements of the Paperwork Reduction Act unless that collection of information displays a currently valid OMB Control Number. The OMB Control Number for this information collection is 2120-0056. Public reporting for this collection of information is estimated to be approximately 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. All responses to this collection of information are mandatory. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden to: Information Collection Clearance Officer, Federal Aviation Administration, 10101 Hillwood Parkway, Fort Worth, TX 76177-1524.

Authority for this Rulemaking

Title 49 of the United States Code specifies the FAA's authority to issue rules on aviation safety. Subtitle I, section 106, describes the authority of the FAA Administrator. Subtitle VII: Aviation Programs describes in more detail the scope of the Agency's authority.

The FAA is issuing this rulemaking under the authority described in Subtitle VII, Part A, Subpart III, Section 44701: General requirements. Under that section, Congress charges the FAA with promoting safe flight of civil aircraft in air commerce by prescribing regulations for practices, methods, and procedures the Administrator finds necessary for safety in air commerce. This regulation is within the scope of that authority because it addresses an unsafe condition that is likely to exist or develop on products identified in this rulemaking action.

Regulatory Findings

This AD will not have federalism implications under Executive Order 13132. This AD will not have a substantial direct effect on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government.

For the reasons discussed above, I certify that this AD:

- (1) Is not a “significant regulatory action” under Executive Order 12866, and
- (2) Will not affect intrastate aviation in Alaska.

List of Subjects in 14 CFR Part 39

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.

The Amendment

Accordingly, under the authority delegated to me by the Administrator, the FAA amends 14 CFR part 39 as follows:

PART 39 - AIRWORTHINESS DIRECTIVES

- 1. The authority citation for part 39 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701.

§ 39.13 [Amended]

- 2. The FAA amends § 39.13 by adding the following new airworthiness directive:

2021-23-06 Various Model 234 and Model CH-47D Helicopters: Amendment 39-21804; Docket No. FAA-2021-0951; Project Identifier AD-2021-01047-R.

(a) Effective Date

This airworthiness directive (AD) is effective [INSERT DATE 15 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

(b) Affected ADs

None.

(c) Applicability

This AD applies to Model 234 and Model CH-47D helicopters, regardless of type certificate holder, certificated in any category. Type certificate holders include, but are not limited to:

- (1) Columbia Helicopters, Inc.,
- (2) Billings Flying Service, Inc.,
- (3) Tandem Rotor, LLC, and
- (4) Unical Aviation, Inc.

(d) Subject

Joint Aircraft System Component (JASC) Code/Air Transport Association (ATA) of America Code: 6710, Rotor flight controls.

(e) Unsafe Condition

This AD was prompted by inadequate maintenance, which resulted in mechanical failure of the longitudinal cyclic trim actuator (LCTA). The FAA is issuing this AD to correct this unsafe condition, which if not addressed, could result in loss of control of the rotor blades and subsequent loss of control of the helicopter or the rotor blades striking the fuselage.

(f) Compliance

Comply with this AD within the compliance times specified, unless already done.

(g) Required Actions

(1) Within 3 calendar days after the effective date of this AD, determine the hours time-in-service (TIS) and lift cycles since last overhaul for each LCTA on your helicopter. If lift cycles cannot be determined, count 6 lift cycles for each hour TIS for each LCTA. For purposes of this AD, a lift cycle is defined as any of the following:

- (i) Takeoff from ground for flight;
- (ii) Lift of a new external load while in flight; or
- (iii) Lift of a new internal load while in flight (e.g., fluid drawn into an internal tank).

(2) If the last overhaul of any LCTA was not approved for return to service by a person that meets the requirements of 14 CFR part 43, or, if you are unable to establish hours TIS and lift cycles since last overhaul of an LCTA (e.g., hours TIS and lift cycles for each LCTA were not tracked), within 10 calendar days after the effective date of this AD, and thereafter at intervals not to exceed 3,000 hours TIS or 18,000 lift cycles, whichever occurs first, overhaul that LCTA. For purposes of any overhaul required by this AD, the overhaul must include:

- (i) An inspection of each acme screw for wear and cracking;
- (ii) Lubricating all drive threads and gears; and
- (iii) A test to ensure proper operation of the extend and retract travel limit switches.

(3) If the last overhaul of an LCTA was approved for return to service by a person that meets the requirements of 14 CFR part 43, overhaul the LCTA (to include the overhaul requirements specified in paragraphs (g)(2)(i) through (iii) of this AD) within 500 hours TIS or 3,000 lift cycles since last overhaul, whichever occurs first; or within 90 days after the effective date of this AD, whichever occurs later. Thereafter, overhaul each LCTA at intervals not to exceed 3,000 hours TIS or 18,000 lift cycles, whichever occurs first.

(4) As of the effective date of this AD, do not install any LCTA on any helicopter unless it has been approved for return to service by a person that meets the requirements of 14 CFR part 43 after an overhaul that includes the overhaul requirements specified in paragraphs (g)(2)(i) through (iii) of this AD, and that LCTA has not been in service for more than 3,000 hours TIS or 18,000 lift cycles since that overhaul.

(5) Within 10 days after completing each LCTA overhaul required by this AD, provide the following information by email to vaughn.n.schmitt@faa.gov and ian.a.hansen@faa.gov; or by mail to Vaughn Schmitt and Ian Hansen, Aircraft Evaluation Group, Safety Standards Division, FAA, 10101 Hillwood Parkway, Fort Worth, TX 76177:

- (i) Helicopter Owner/Operator name, email, address, and telephone number,
- (ii) LCTA model, part number and serial number,
- (iii) Months TIS since last LCTA overhaul,
- (iv) Operating hours and lift cycles since last LCTA overhaul,
- (v) Date and location of last LCTA overhaul,
- (vi) LCTA repairs since last LCTA overhaul,
- (vii) LCTA condition when removed,
- (viii) LCTA reports of failures or degraded functions,
- (ix) LCTA part replacements,

- (x) Point of contact information for additional information,
- (xi) Any additional notes or comments, and
- (xii) Pictures, if available.

(h) Alternative Methods of Compliance (AMOCs)

(1) The Manager, Seattle ACO Branch, FAA, has the authority to approve AMOCs for this AD, if requested using the procedures found in 14 CFR 39.19. In accordance with 14 CFR 39.19, send your request to your principal inspector or local Flight Standards District Office, as appropriate. If sending information directly to the manager of the certification office, send it to the attention of the person identified in paragraph (i) of this AD. Information may be emailed to: 9-ANM-Seattle-ACO-AMOC-Requests@faa.gov.

(2) Before using any approved AMOC, notify your appropriate principal inspector, or lacking a principal inspector, the manager of the local flight standards district office/certificate holding district office.

(i) Related Information

For more information about this AD, contact David Herron, Aerospace Engineer, Systems & Equipment Section, Seattle ACO Branch, FAA, 2200 South 216th St., Des Moines, WA 98198; phone and fax: (206) 231-3554; email david.herron@faa.gov.

(j) Material Incorporated by Reference

None.

Issued on December 6, 2021.

Lance T. Gant, Director,
Compliance & Airworthiness Division,
Aircraft Certification Service.

[FR Doc. 2021-27539 Filed: 12/16/2021 11:15 am; Publication Date: 12/20/2021]